

Wall Arrangement for a Servomotor

Abstract

A movable wall for separating an interior of a housing for a brake booster into a first chamber and a second chamber. The movable wall is characterized by a diaphragm, a backing plate and a hub member. The diaphragm has a peripheral bead secured to the housing and an axial bead located in a groove in a cylindrical body of the hub member. The groove has a front face that is separated from a rear face by an arcuate transition surface located between a bottom of the groove and the front face. The axial bead has a profile corresponding to the groove and an arcuate lip that extends from a rear surface. The lip is connected by a convolute to a radial section of the disc portion of the diaphragm while the backing plate has an axial opening surrounded by a radial surface that engages the front face of the groove. The axial bead engages the radial surface to urge the radial annular surface into engagement with the front face of the groove while sealing the front chamber from the rear chamber. In response to a manual input force moving the cylindrical body, the convolute allows the cylindrical body to move without creating a radial force in the di-

aphragm that may cause separation between axial bead and groove.